

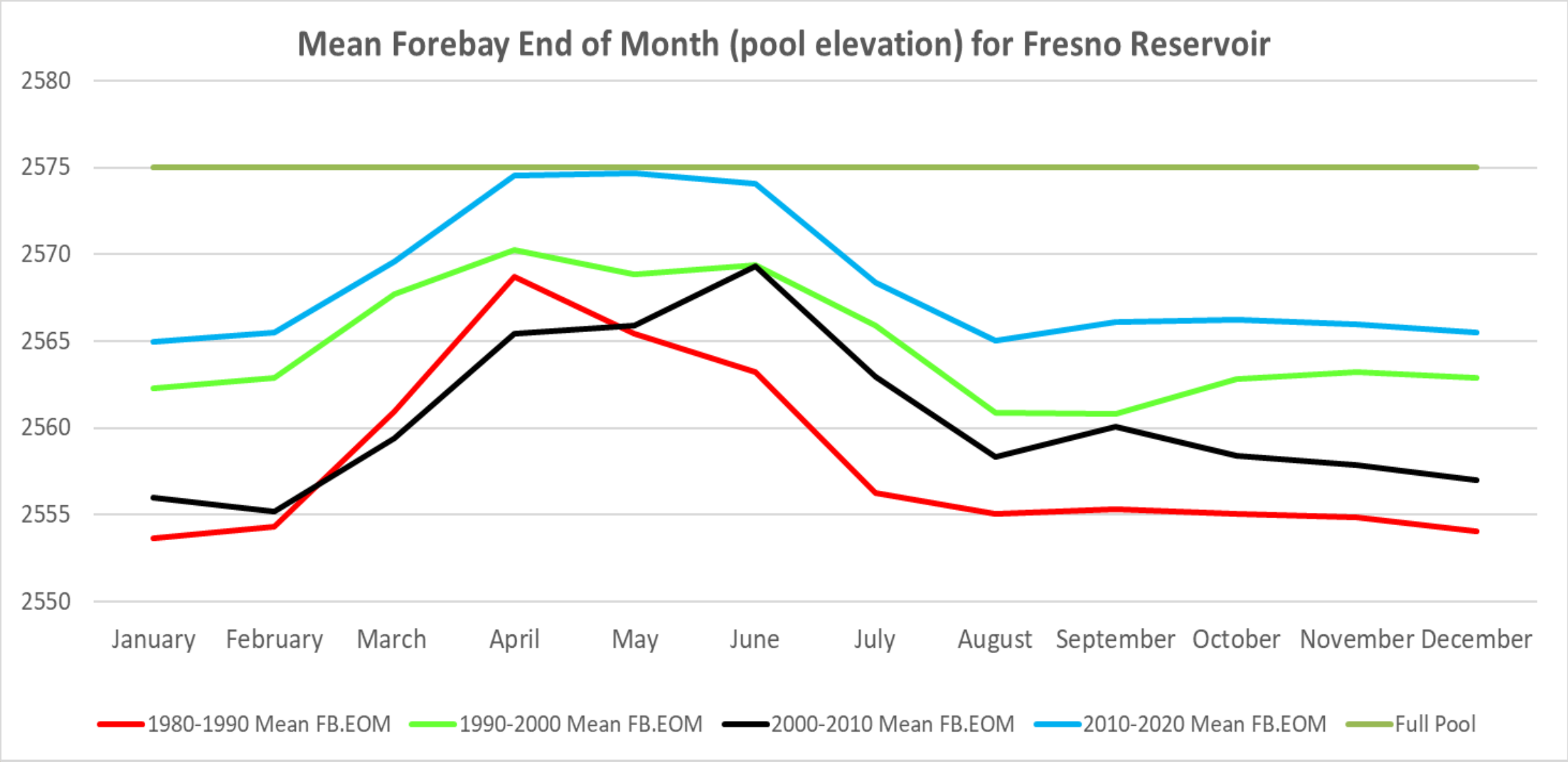
Fresno Fisheries Update

Cody Nagel

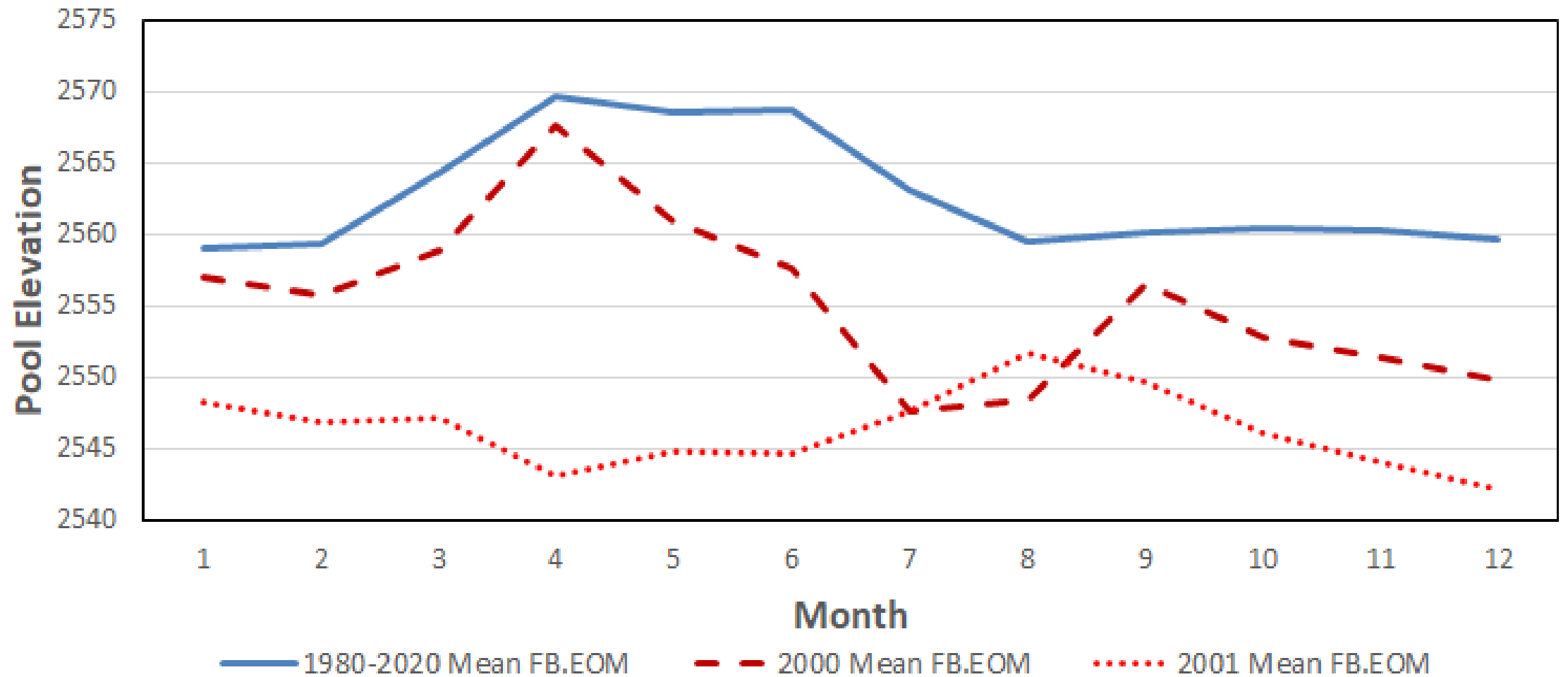
Havre Area Fisheries Biologist



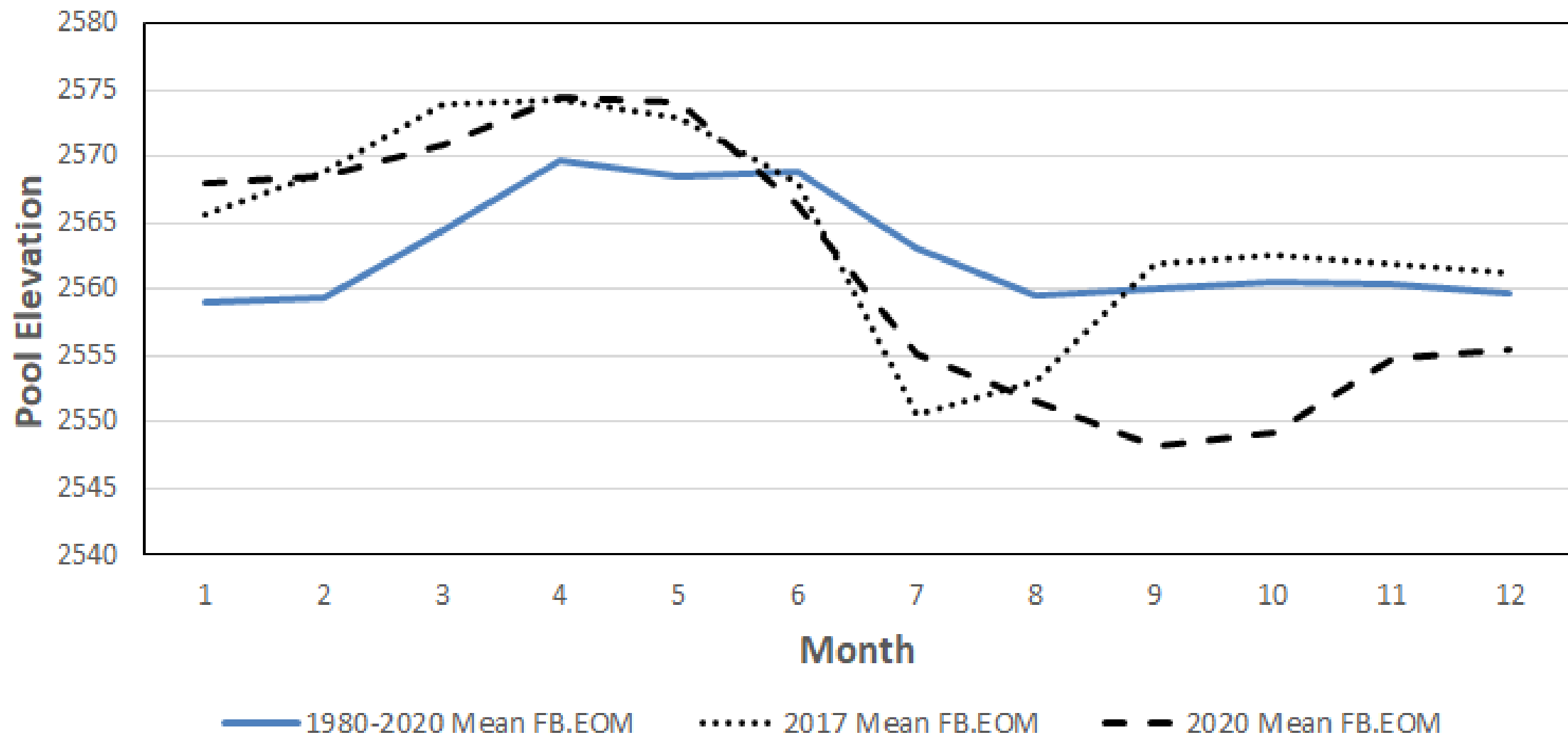
Fresno Pool Elevation Trends by Decade (1980-2020)



Fresno Pool Elevation Trends (2000-2001)



Fresno Pool Elevation Trends (2017 and 2020)



Overview

- Current management strategy
- Forage trends (crappie, perch, shiner)
- Walleye trends
 - Stocking
 - Recruitment trends
 - Abundance trends
 - Age and growth trends
 - Population structure trends (PSD)
- Creel surveys (Walleye)
- Discussion/Questions



Current Management Strategy



- Maintain a balanced fish community that promotes walleye growth, age and size structure while ensuring a sustainable forage base



Species Trends

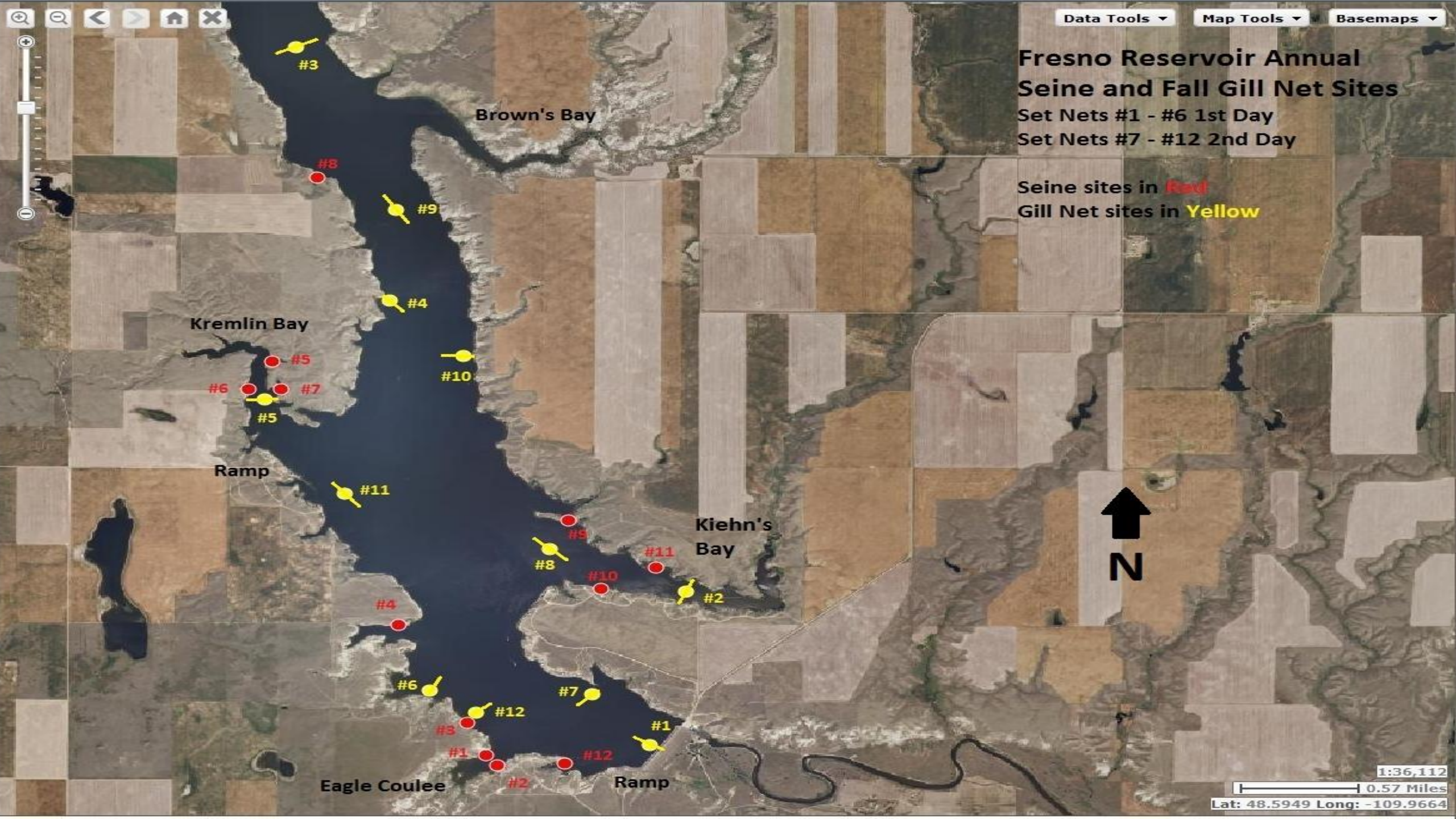
- Adult populations monitored at 12 fixed sites in mid/late September
- Young-of-year populations monitored at 12 fixed sites in early August
- Captured fish are identified, measured and weighed. Stomach and aging analysis is also conducted on walleye



Fresno Reservoir Annual Seine and Fall Gill Net Sites

Set Nets #1 - #6 1st Day
Set Nets #7 - #12 2nd Day

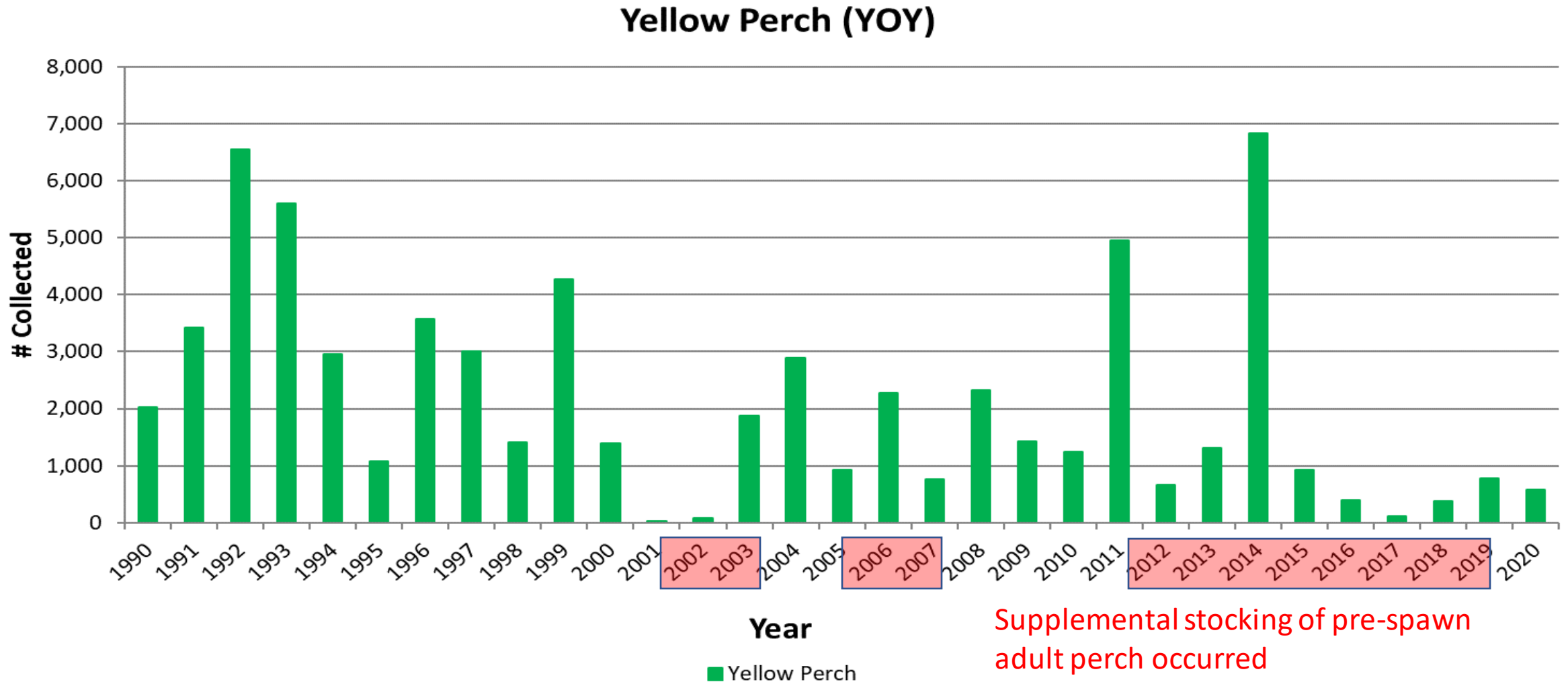
Seine sites in **Red**
Gill Net sites in **Yellow**



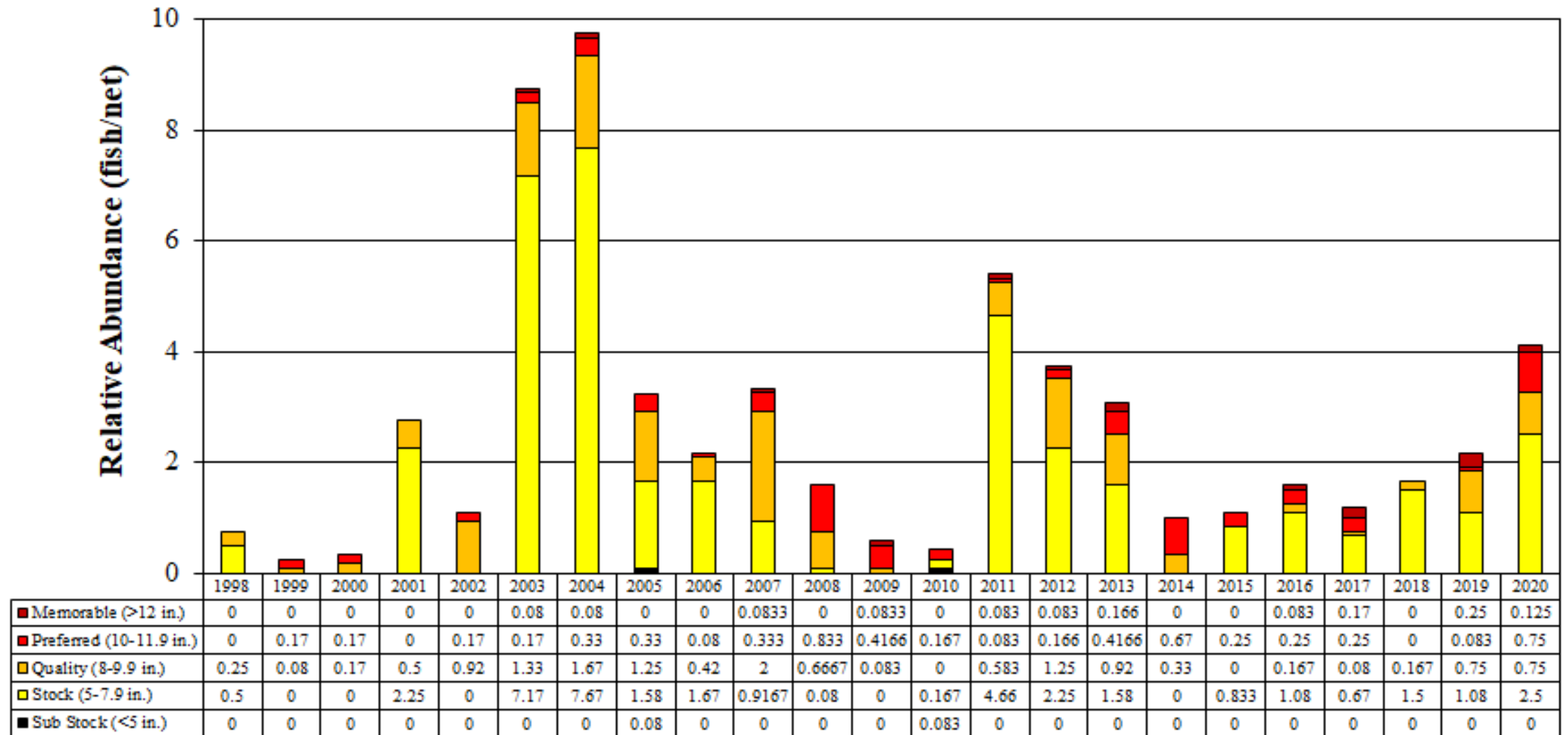
Forage Trends



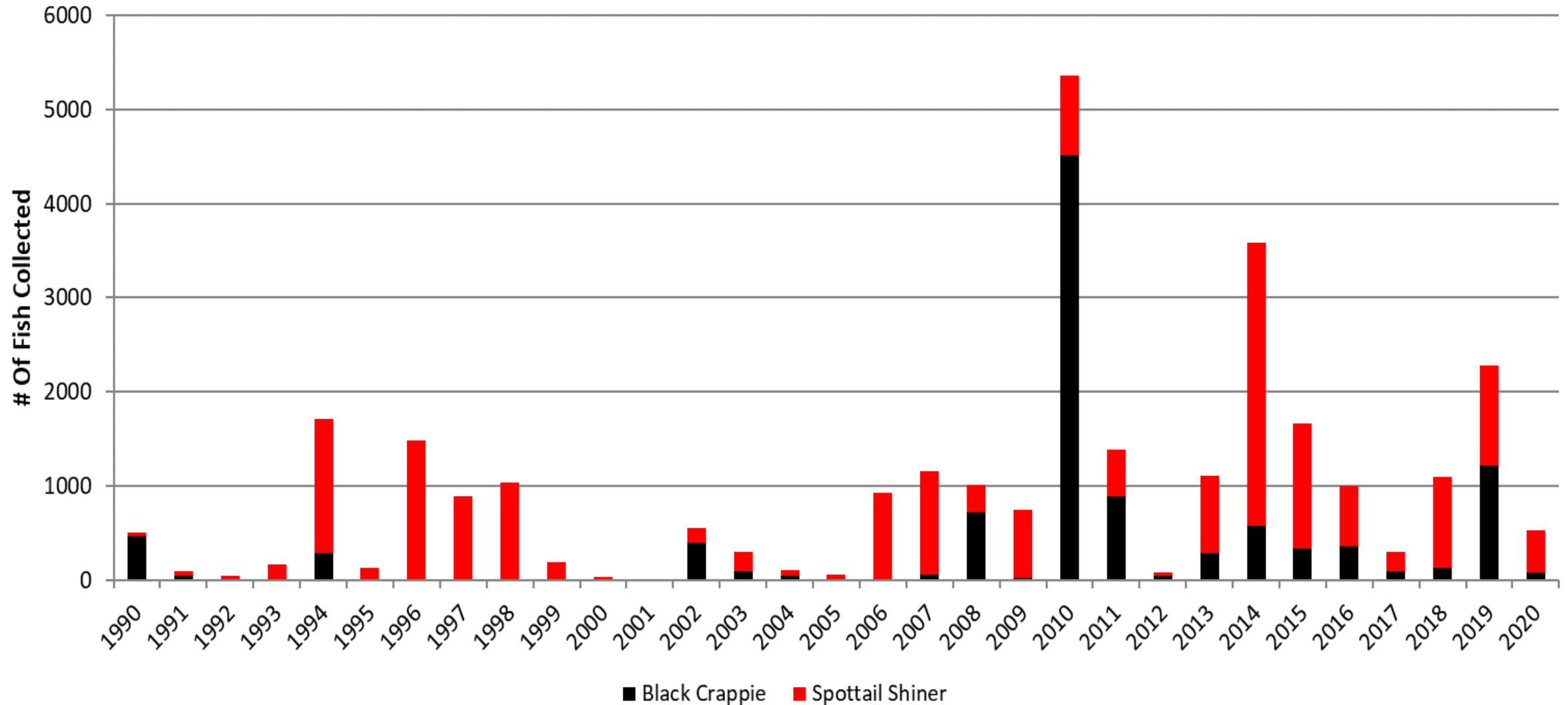
Species Trends (YOY Yellow Perch)



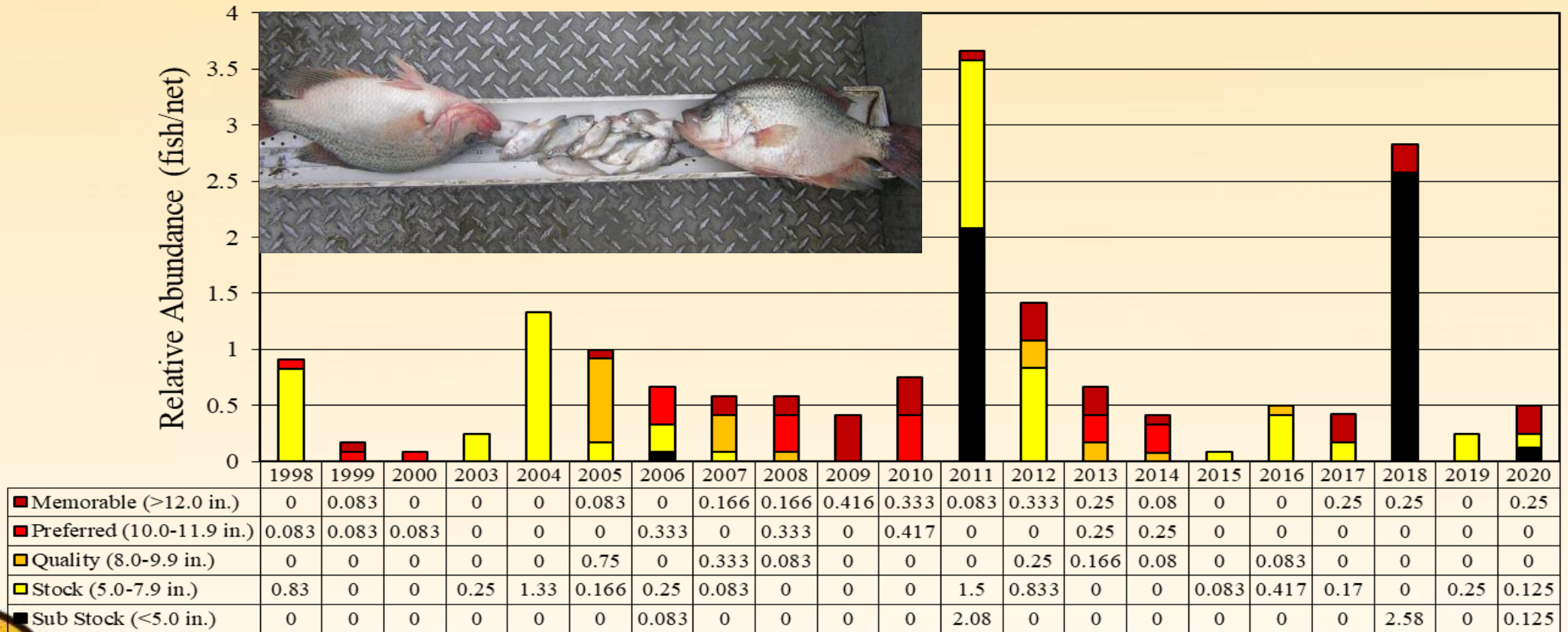
Species Trends (Adult Yellow Perch) LTA-2.3/net



Species Trends (YOY Black Crappie and Spottail Shiner)

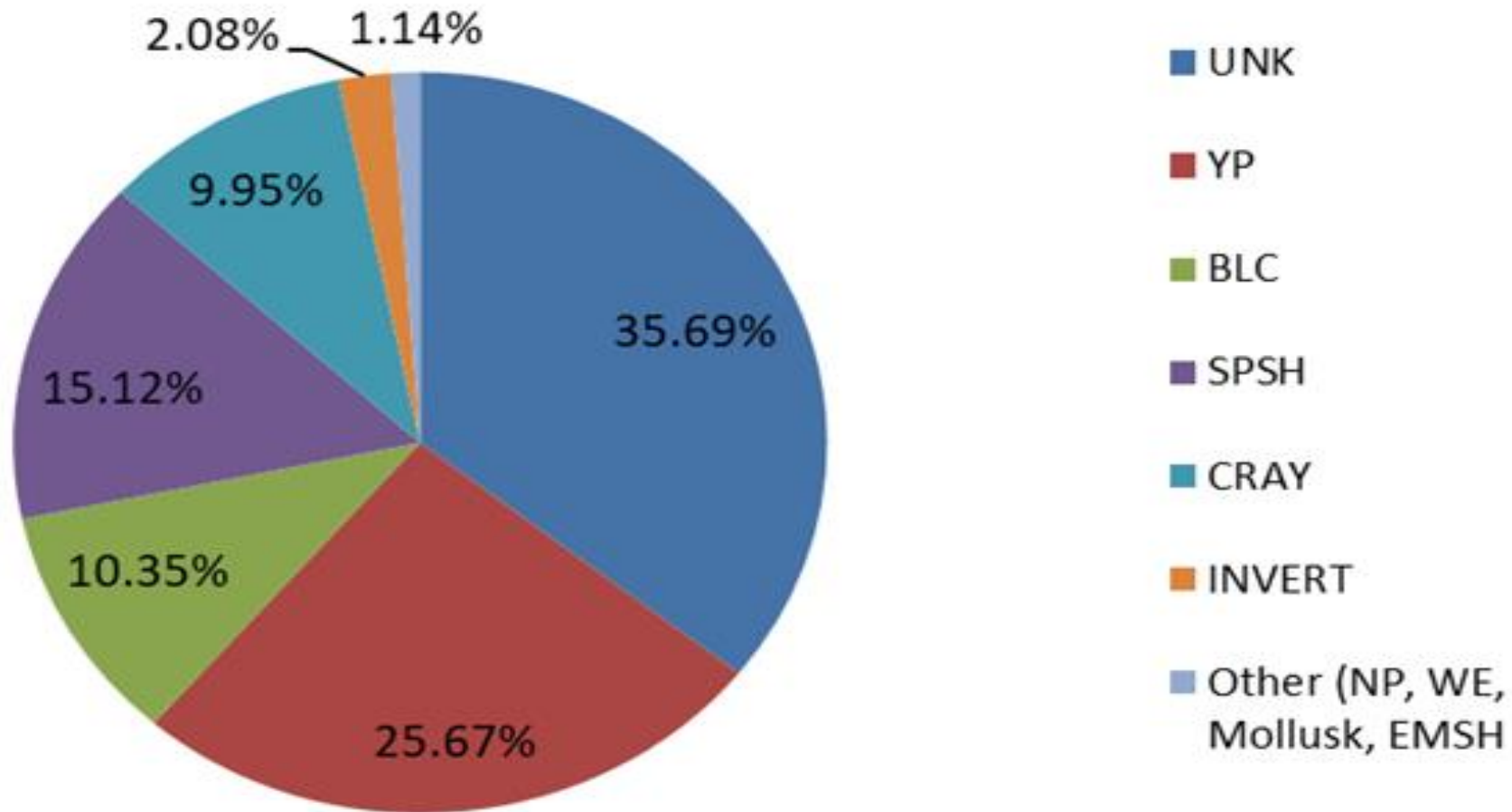


Species Trends (Adult Black Crappie) LTA-0.7/net



Observed Walleye Forage Preference (2012-2020)

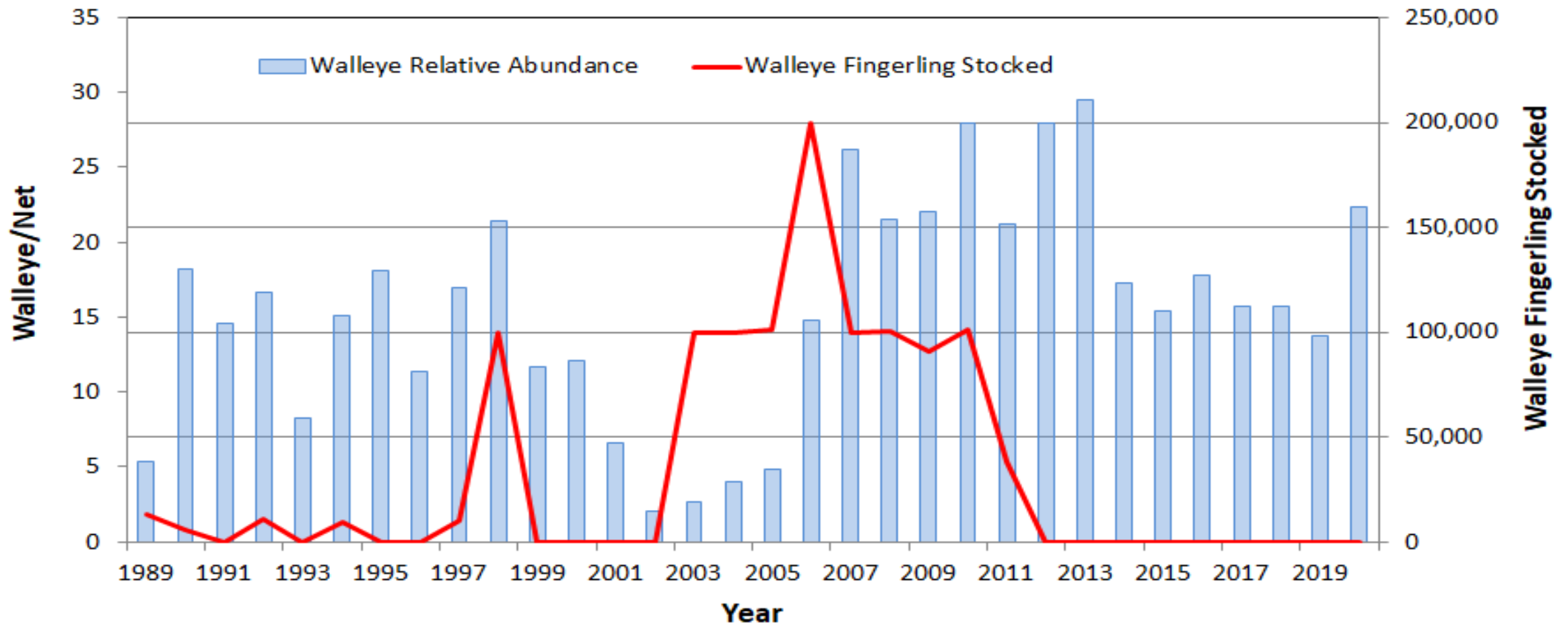
Fresno Walleye Forage Preference (%)



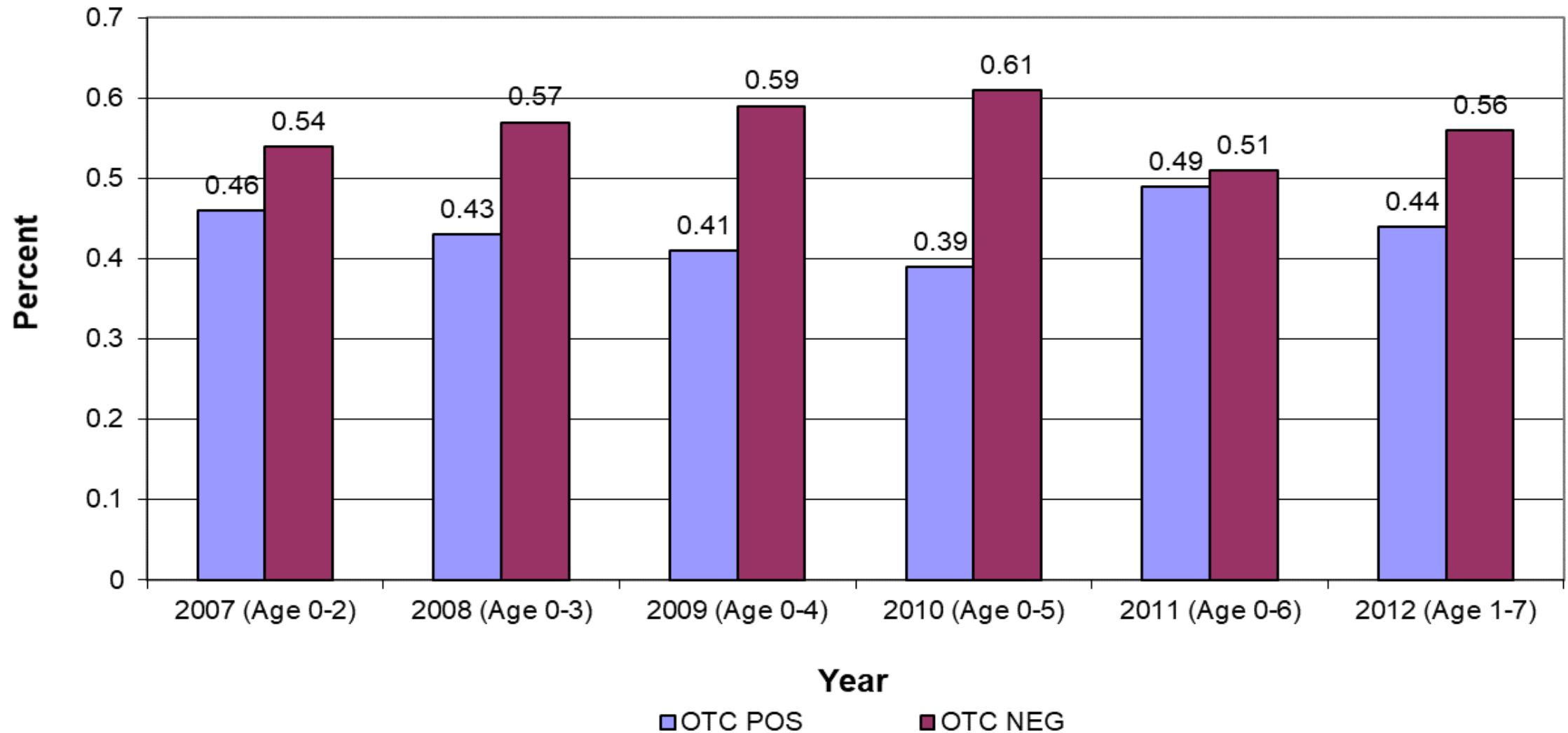
Walleye Trends



Average Walleye Abundance Under Various Stocking Strategies and Water Conditions

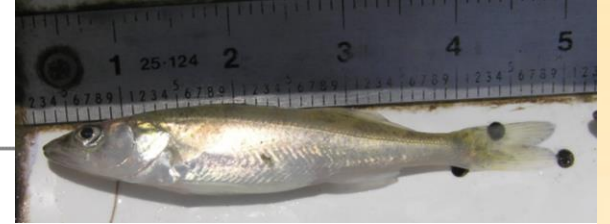
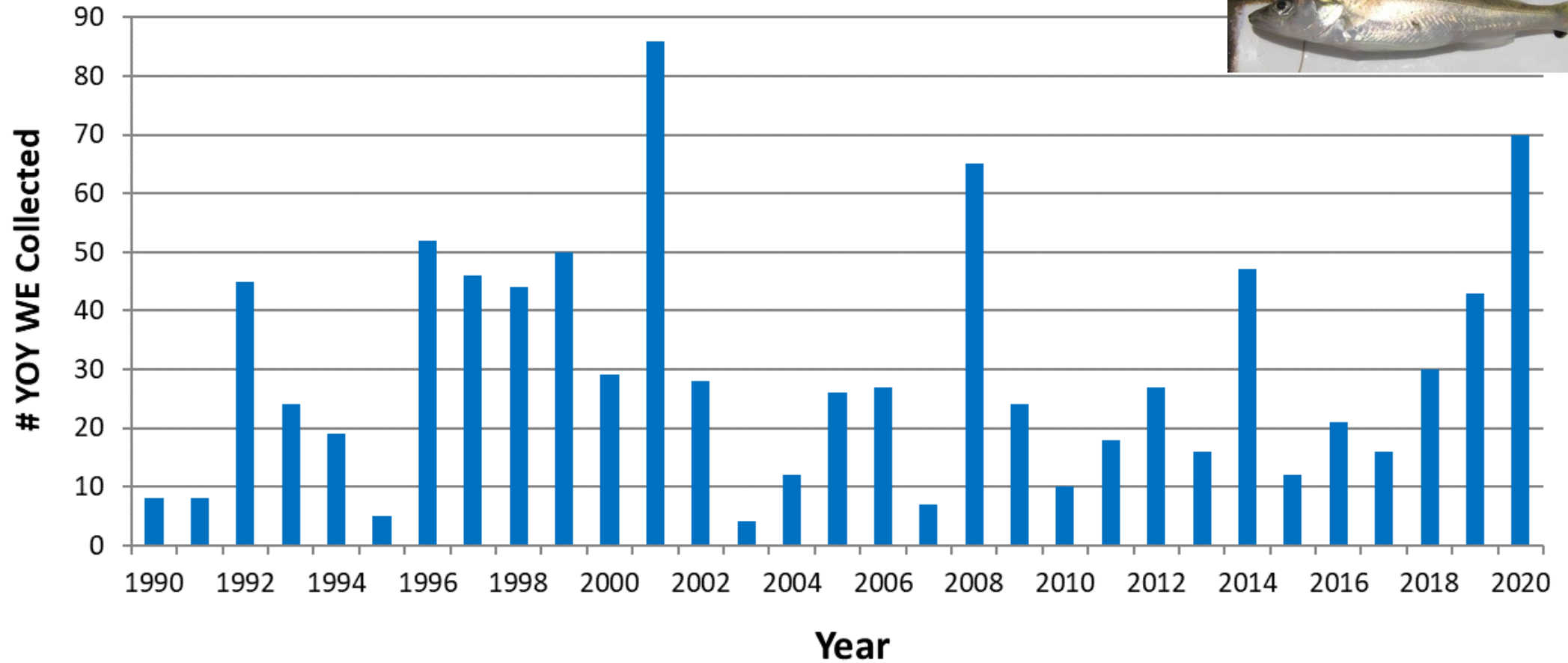


Hatchery and Wild (Walleye Survival)

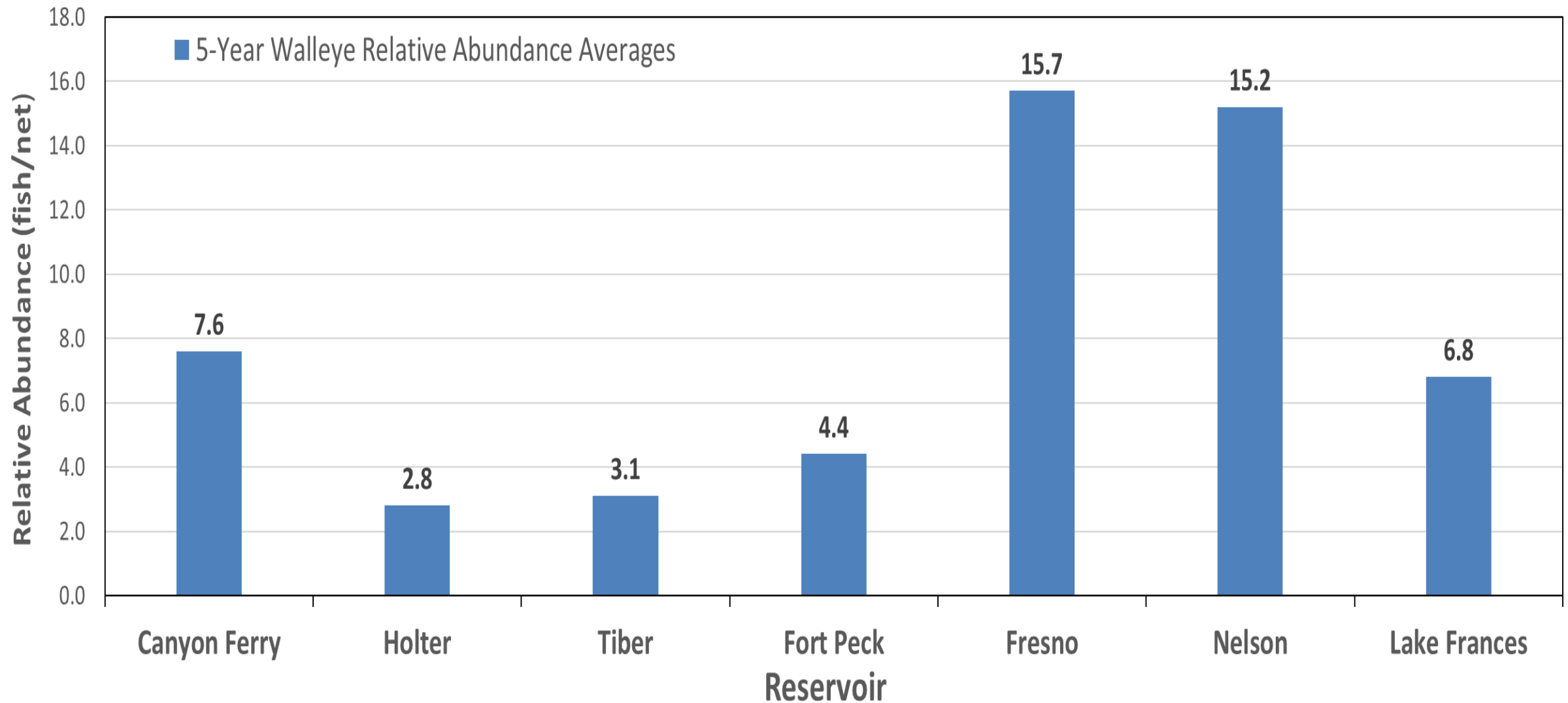


Species Trends (YOY Walleye)

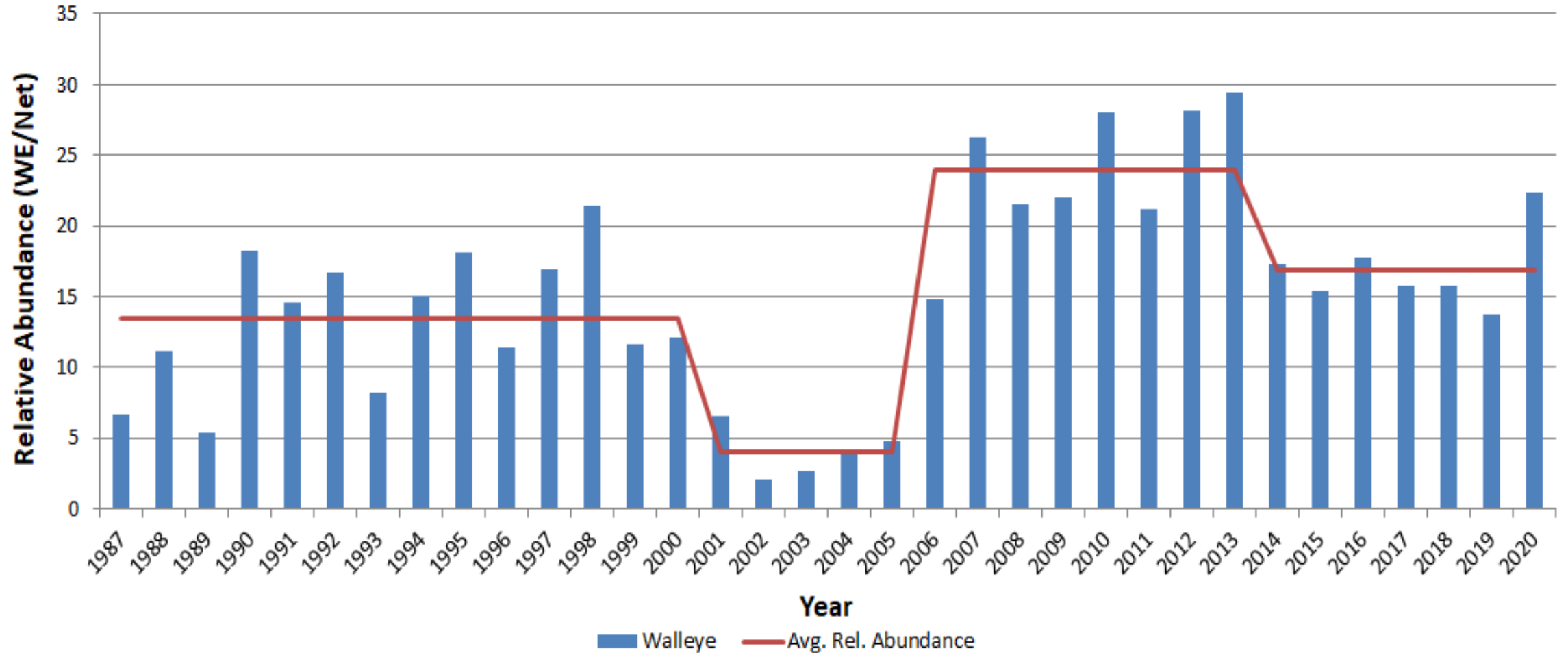
YOY Walleye Sampled (Summer Seining)



Comparing Fresno Average Walleye Relative Abundance to Other Popular Montana Walleye Fisheries (2015-2019)

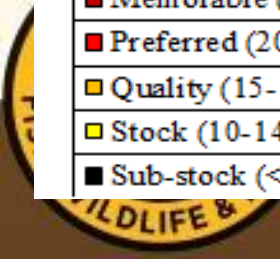
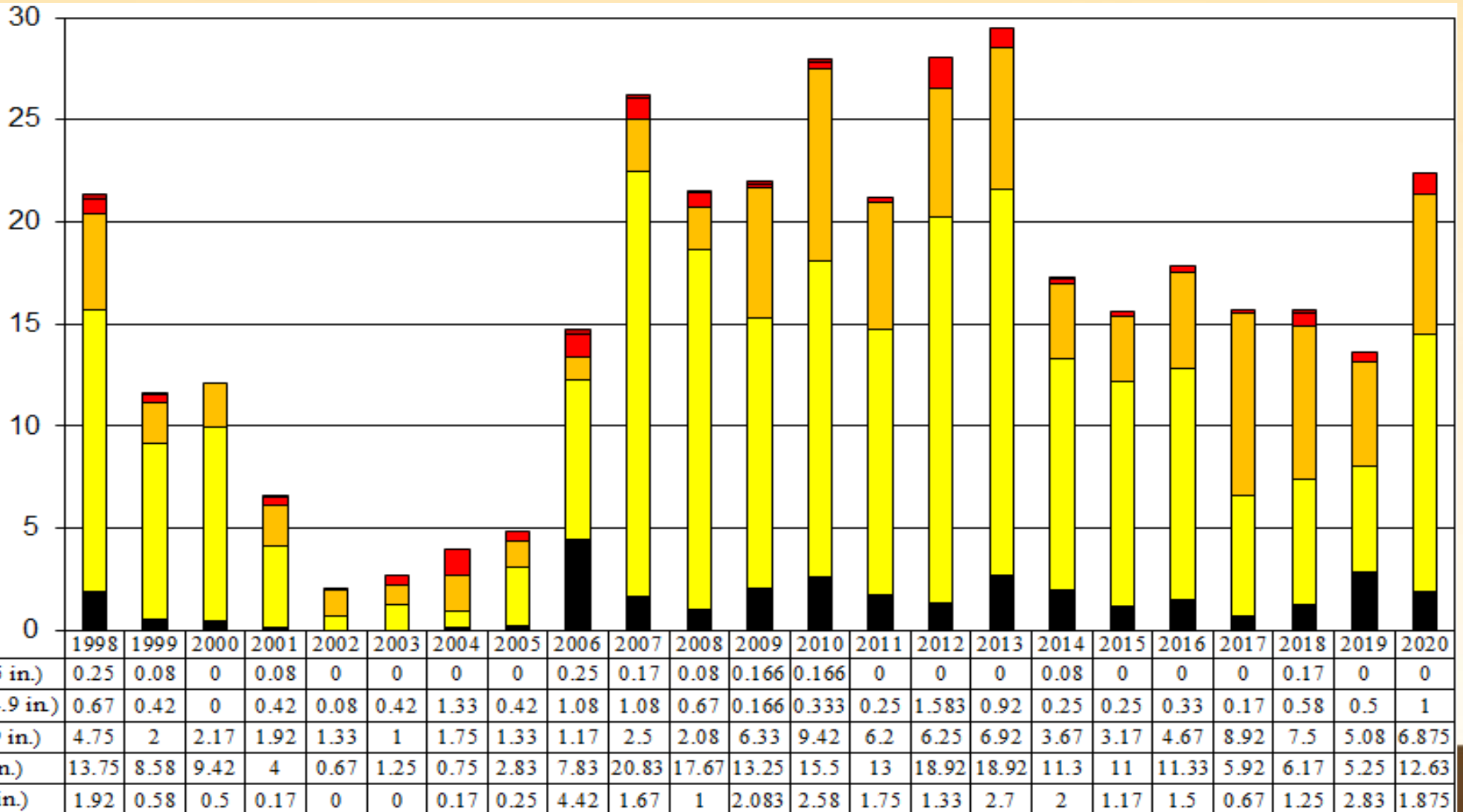


Walleye Trends (Average Abundance)

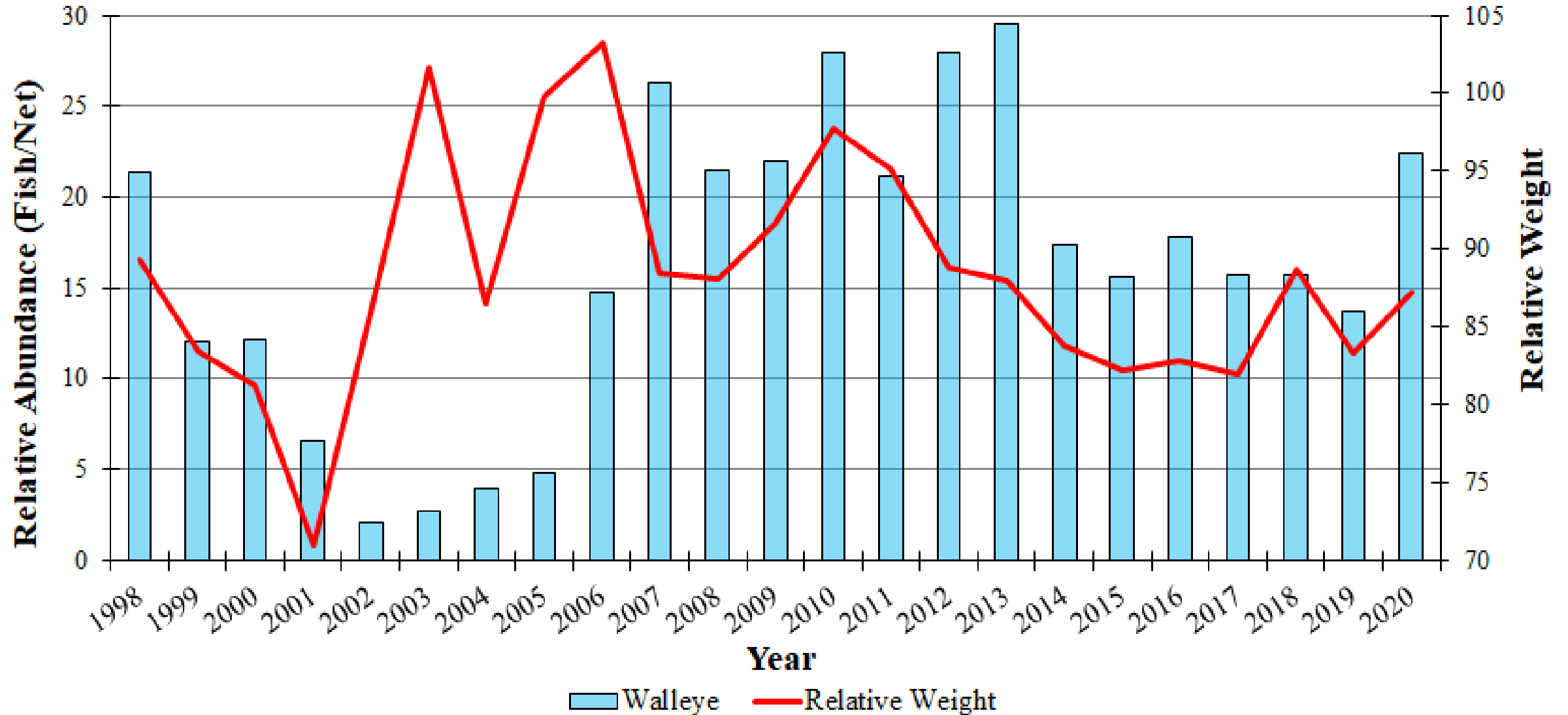


Walleye Trends (Size Distribution)

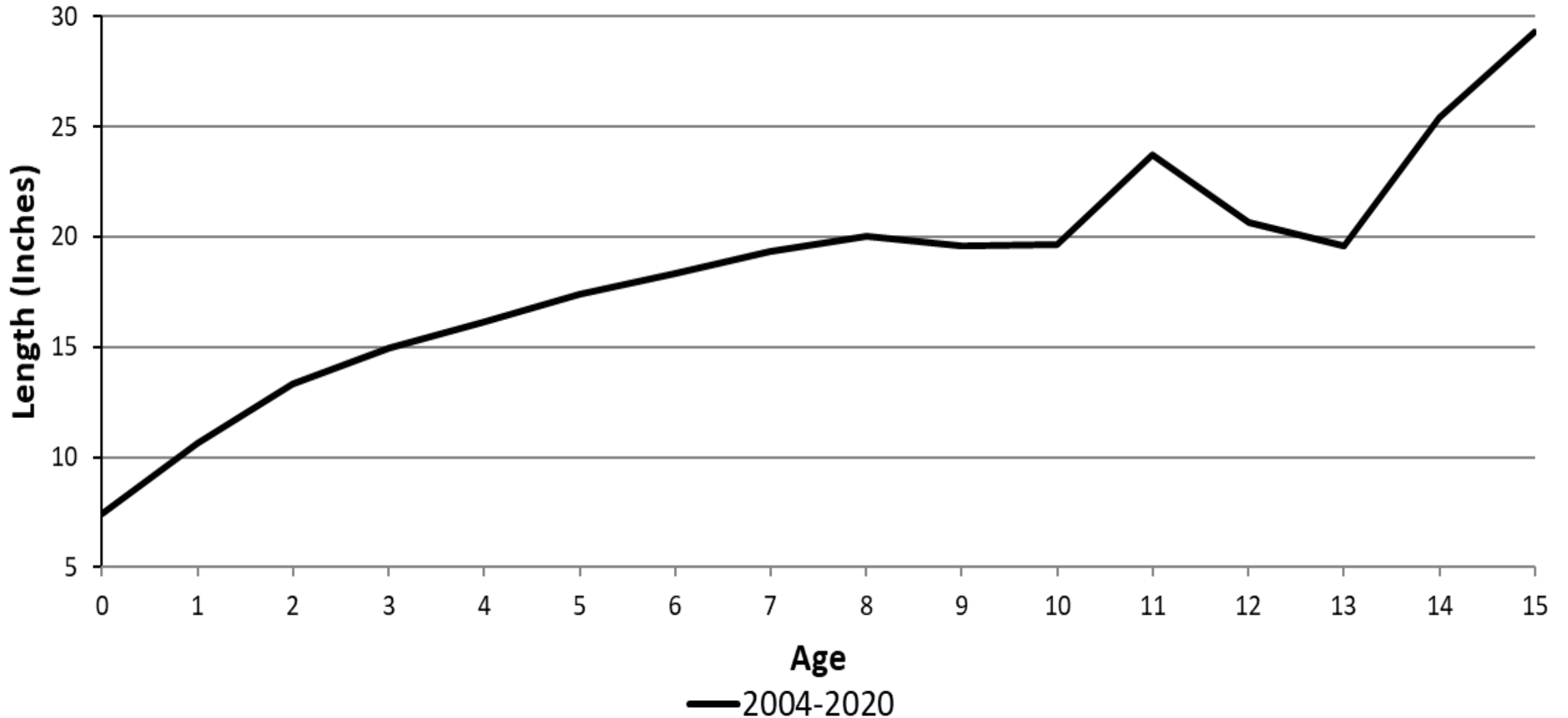
Relative Abundance (fish/net)



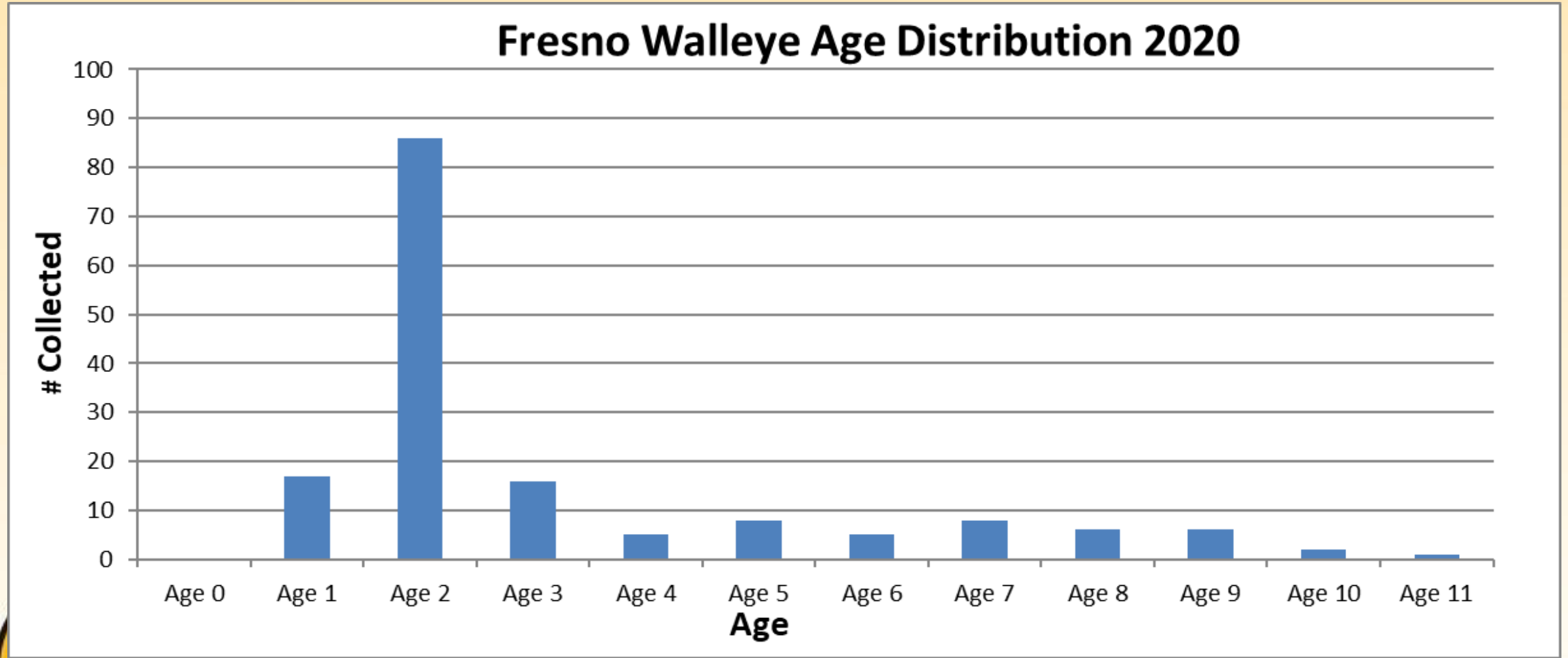
Walleye Trends (Relative Weight)



Walleye Length at Age in Fresno 2004-2020

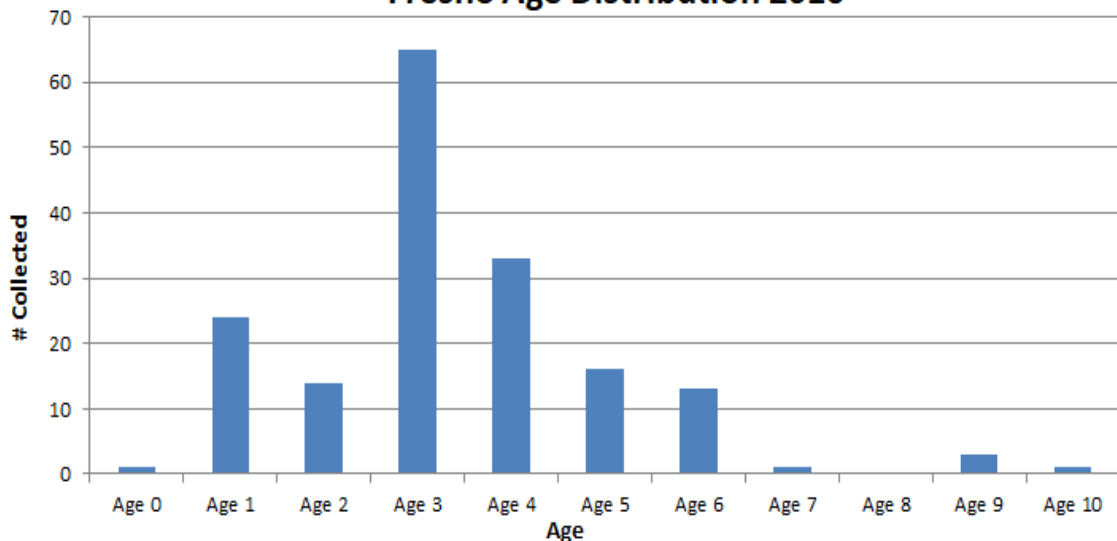


2020 Walleye Age Structure

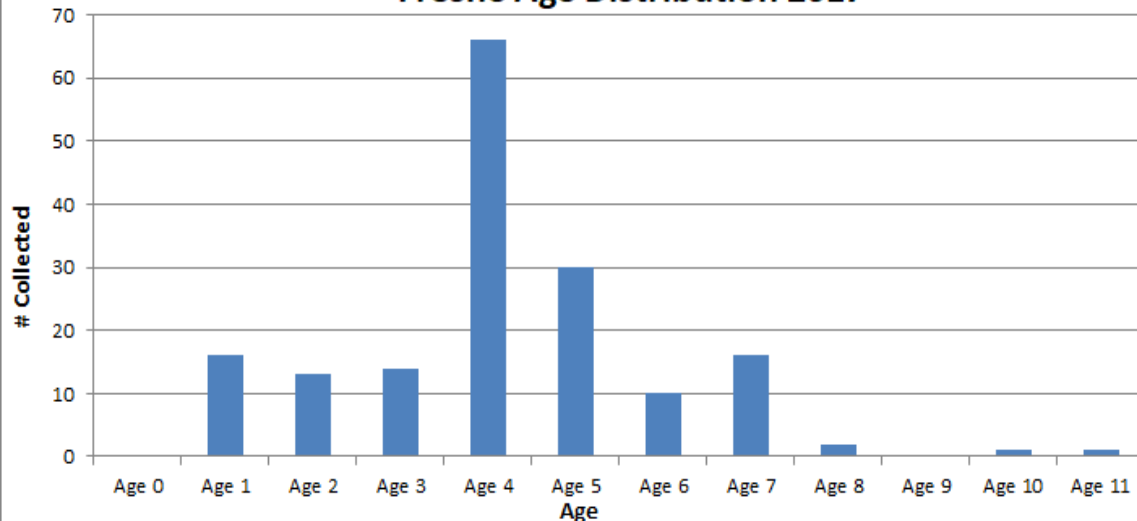


Walleye Age Structure 2019-2016

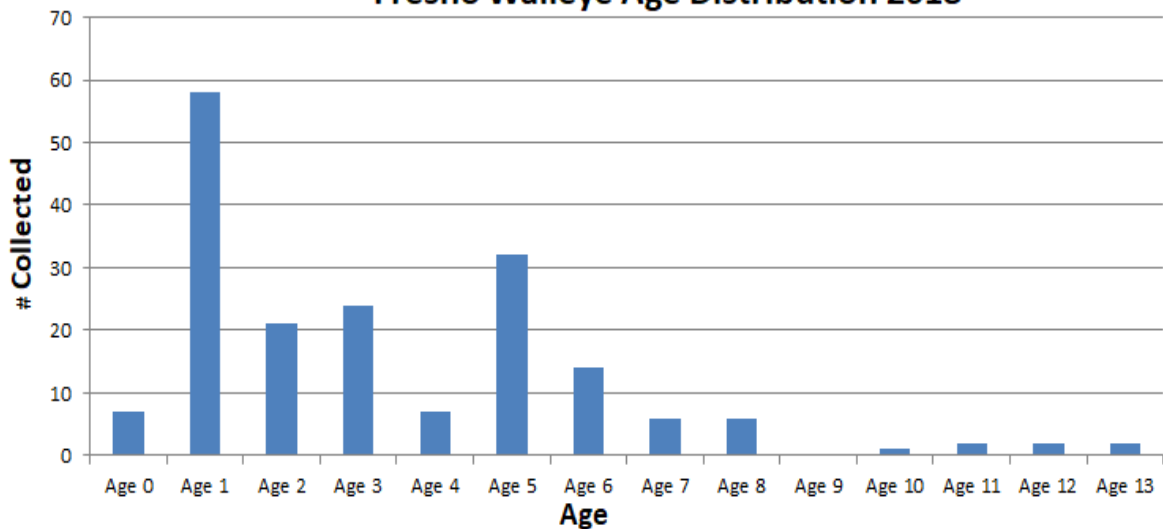
Fresno Age Distribution 2016



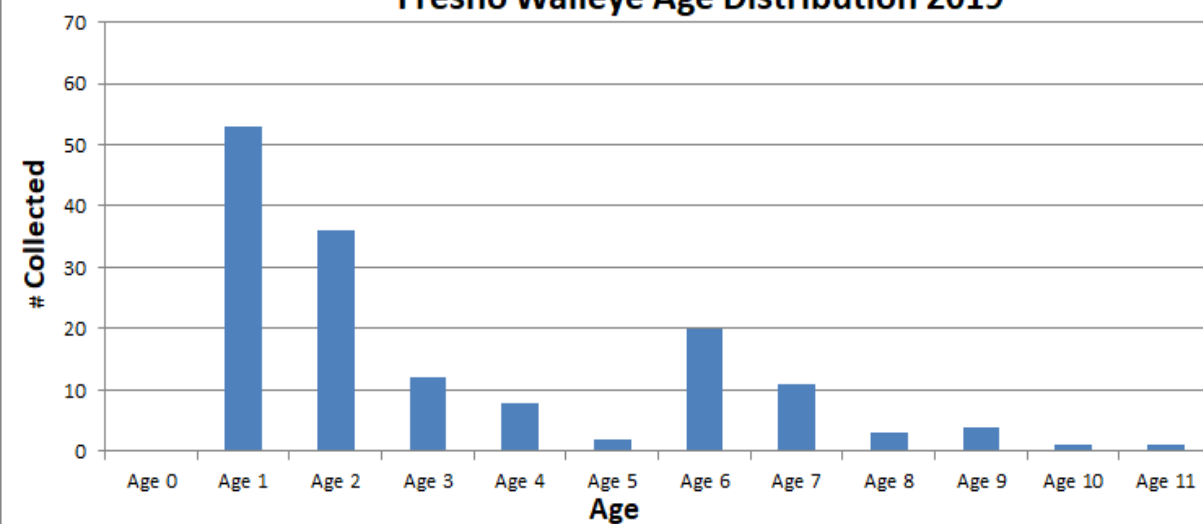
Fresno Age Distribution 2017



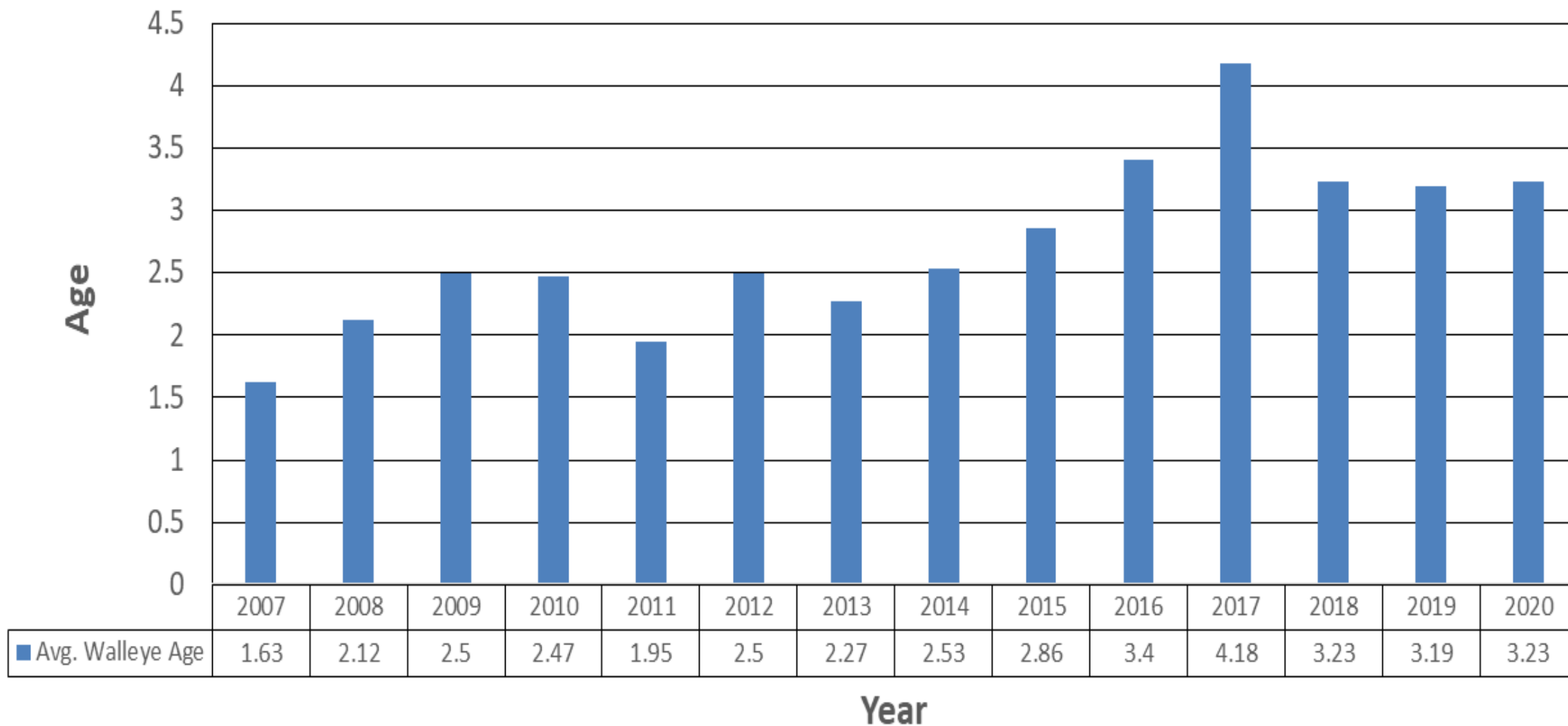
Fresno Walleye Age Distribution 2018



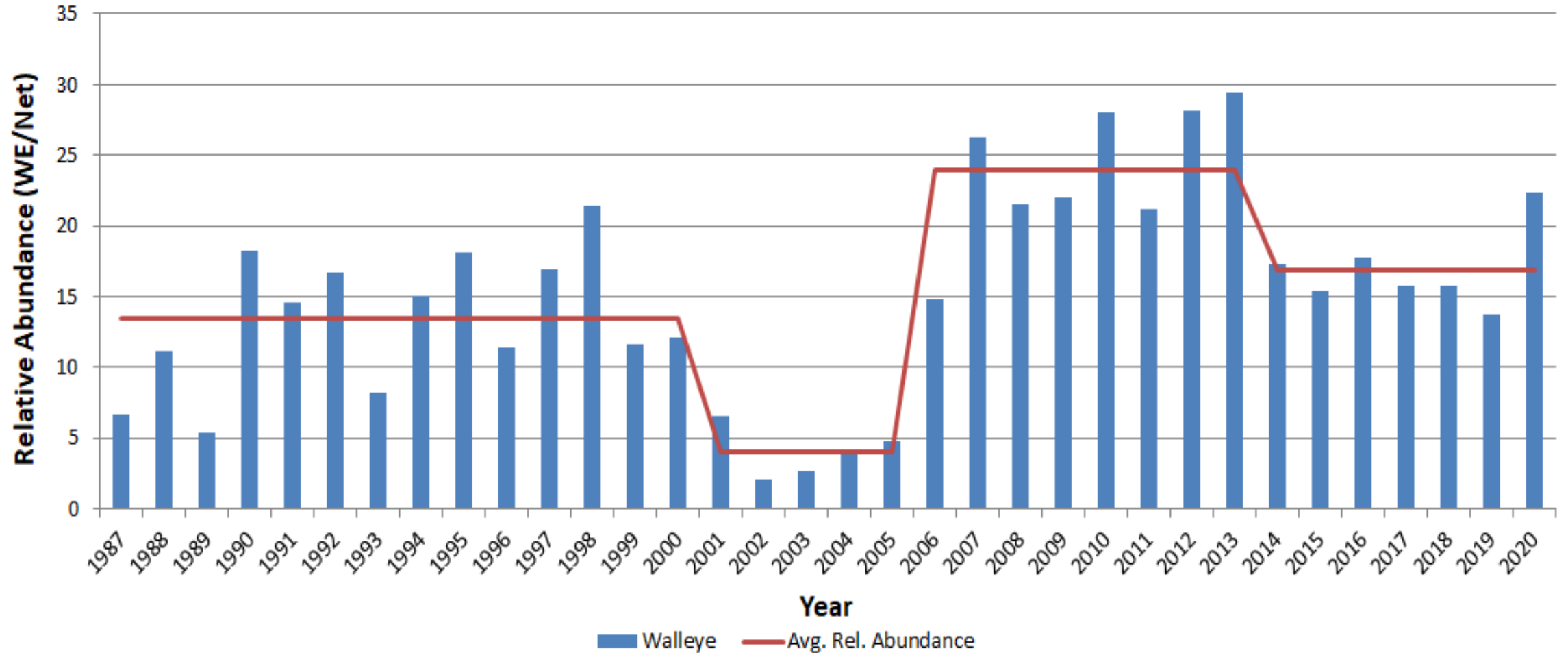
Fresno Walleye Age Distribution 2019



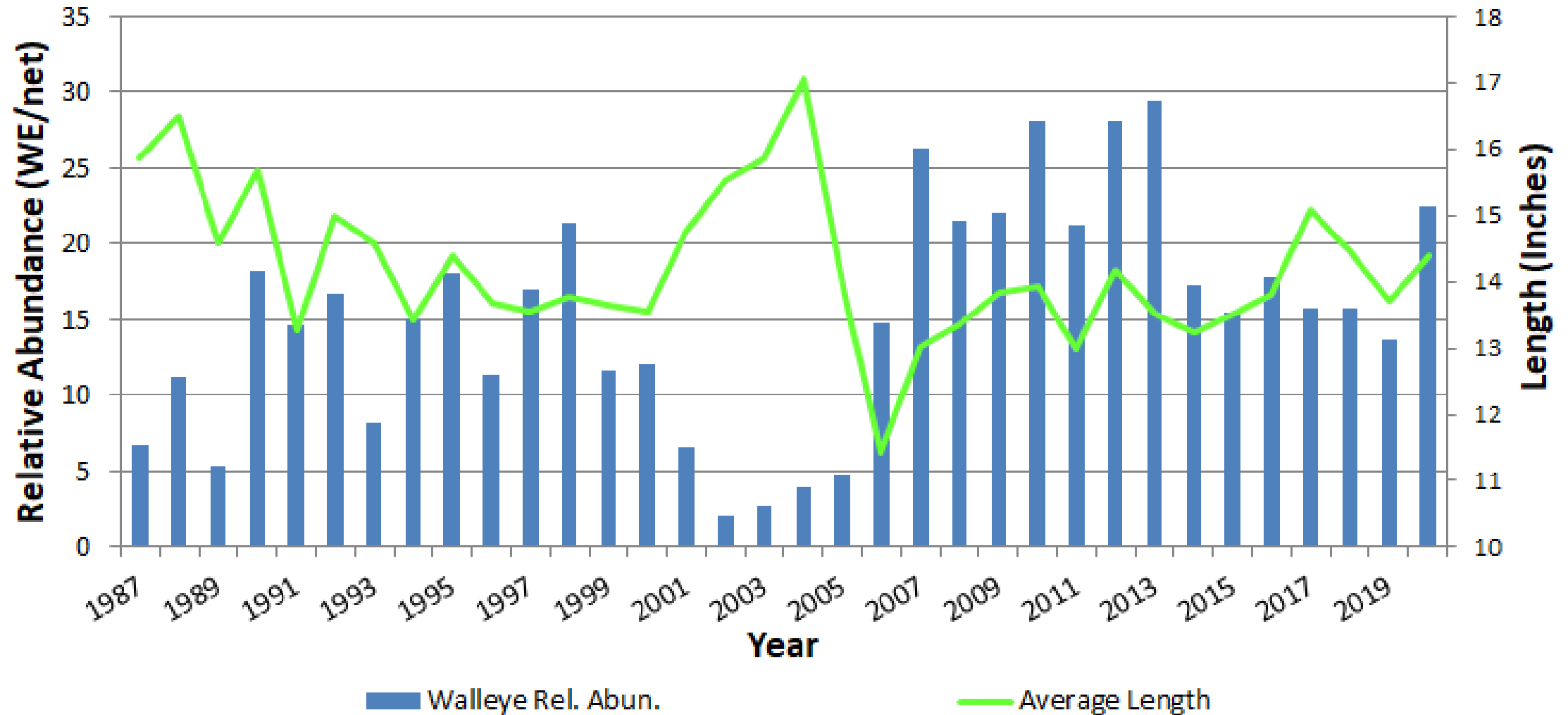
Average Walleye Age Observed at Fresno 2007-2020



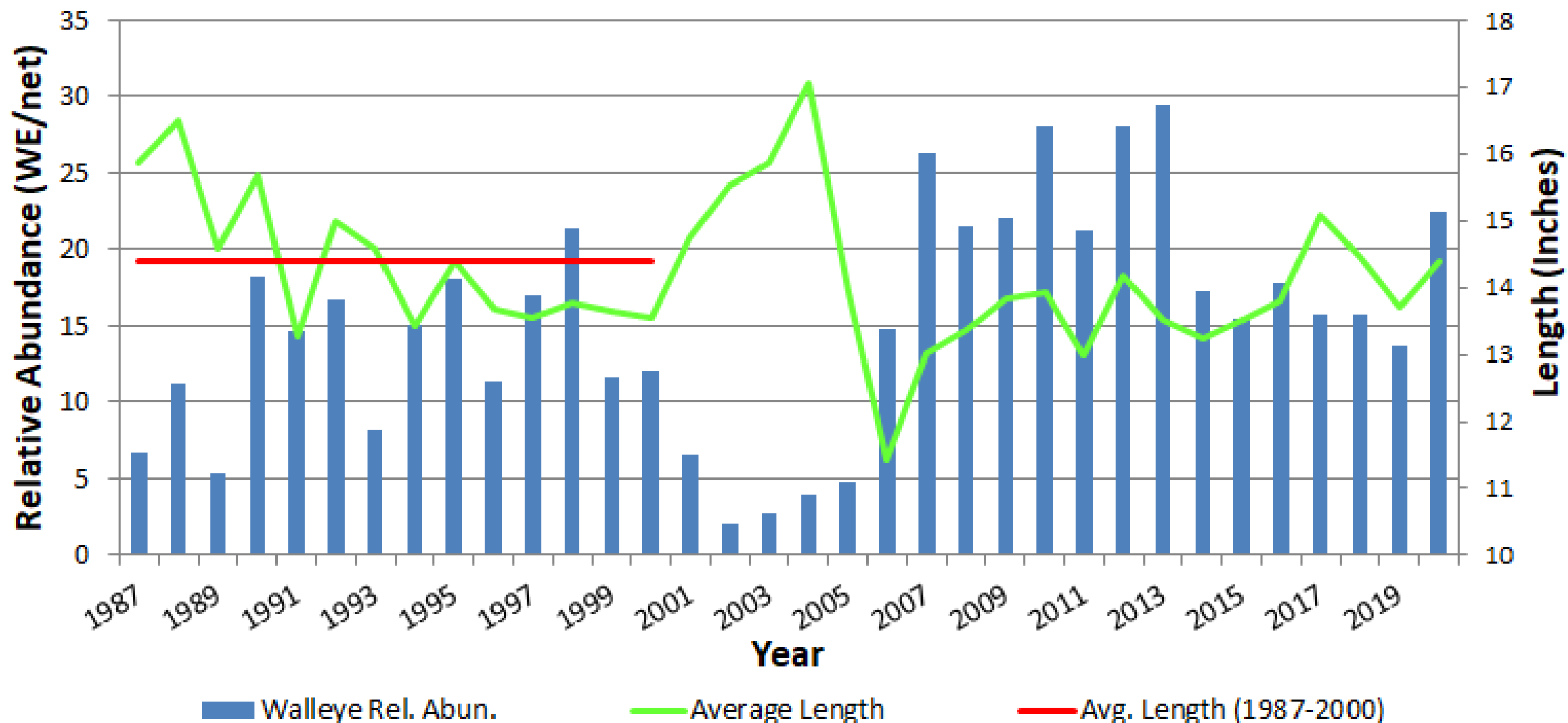
Walleye Trends (Average Length)



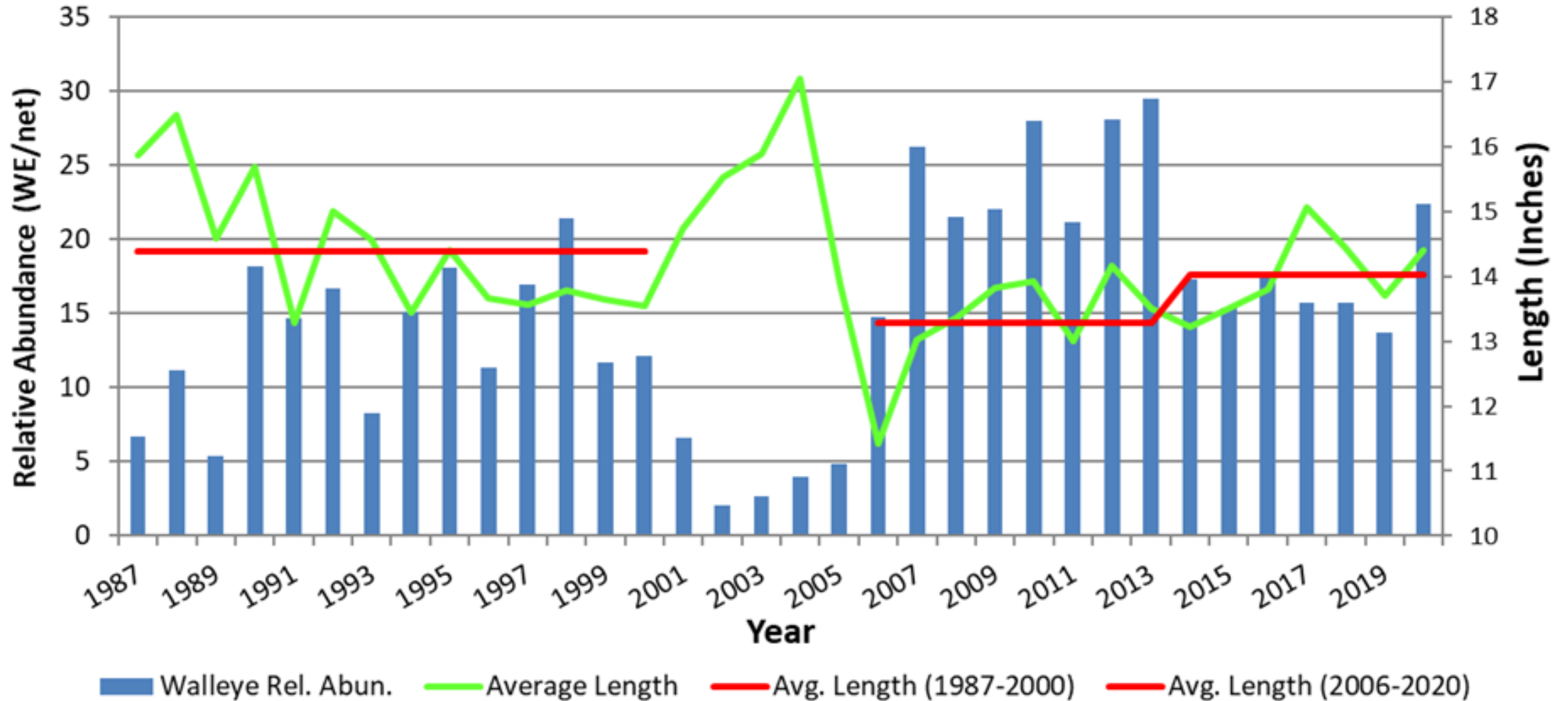
Walleye Trends (Average Length)



Walleye Trends (Average Length)



Walleye Trends (Average Length)



Walleye Proportional Stock Density (PSD)

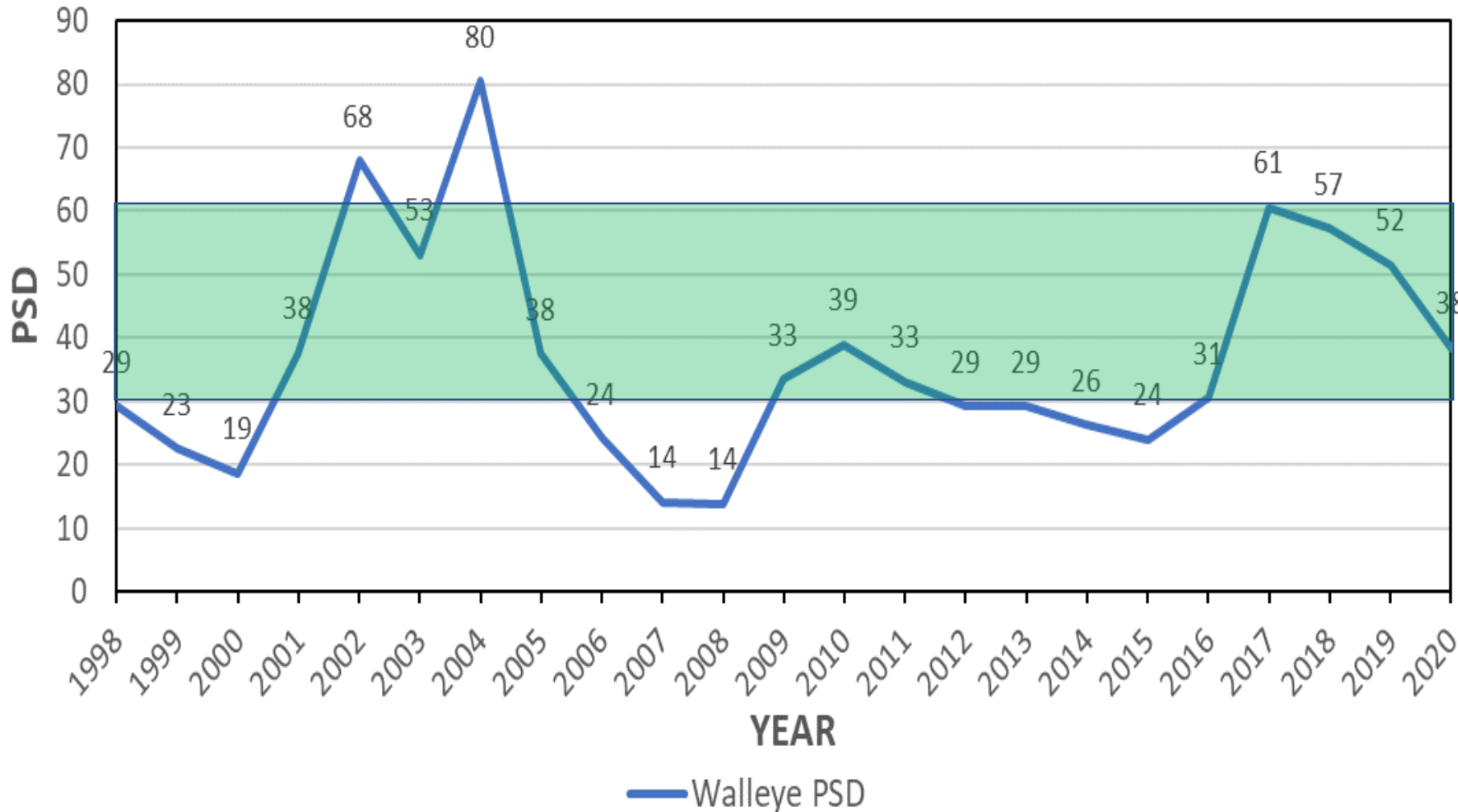
Definitions

$$PSD = \frac{\text{number} \geq \text{quality}}{\text{number} \geq \text{stock}} * 100$$

Quality = walleye greater than 15"

Stock = walleye greater than 10"

A walleye population between 30-60 is considered "balanced" (Anderson and Weithman 1978)



Comparison of Past Creel Surveys at Fresno

Category	1990	1996	2015
Overall Catch Rate (WE/hr) May-September	0.5	0.41	0.75
Avg. Length of WE Harvested	14.8	14.2	15.38
Avg. Weight of WE Harvested (lbs.)	1.07	0.98	1.10
Percent Harvested	52%	53%	32%
Overall Catch Rate (NP/hr) May-September	0.2	0.41	0.1
Avg. Length of NP Harvested	19.8	20.4	22.6
Avg. Weight of NP Harvested (lbs.)	1.69	1.82	2.42
Percent Harvested	29%	19%	11%
Overall Catch Rate (YP/hr) May-September	N/A	N/A	0.01
Avg. Length of YP Harvested	10.8	N/A	10.5
Avg. Weight of YP Harvested (lbs.)	0.68	N/A	0.61
Percent Harvested	N/A	N/A	42%
Average Pool Elevation	2565.9	2566.1	2568.5



2015 Fresno Creel Highlights (669 Angler Interviews)

- Boat angling was most popular method (68%)
- Recreational boaters comprised 32% of interviews and 46% of total people represented in the creel (> # people/boat)
- Hill County had highest representation of overall use (73%)...Cascade 2nd (9.7%)
- Walleye most sought species during open water (77%)
- Walleye < 14" comprised 48% of overall walleye catch
- Walleye < 14" comprised 14% of overall walleye harvest

